

THE WHITNEY LABORATORY OF SEISMOLOGY (1912-1963)*

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The Whitney vault was built in 1912 on the rim of Kilauea crater to begin the resident study of the volcanic and seismic activity of Kilauea and Mauna Loa volcanoes. In 1912 and 1913, standard seismometers were imported from Japan and Germany. By 1928, these instruments had been modified and new ones designed and built by the Hawaiian Volcano Observatory to deal with three local volcanic phenomena: near quick-period earthquakes, harmonic tremor, and ground tilting. Hawaiian-type seismometers, based on designs evolved in the Whitney laboratory, were manufactured in the Observatory's machine shop and installed in a network of stations on the Big Island of Hawai'i. Hawaiian-type seismometers and trained personnel were also sent to Lassen volcano in California and to the Aleutian Islands to institute seismic studies in these regions.

The structural history of the vault and its seismometers and other instruments are given. Abandonment of vault and instruments came in 1963. By this time, its mechanical seismometers were technologically obsolete and replaced by electronic instruments whose ground-movement magnification capabilities were hundreds of thousands of times greater. The Whitney laboratory and its instrumentation ca. 1950 are being rehabilitated as a historical exhibit by the National Park Service and the U. S. Geological Survey's Hawaiian Volcano Observatory.